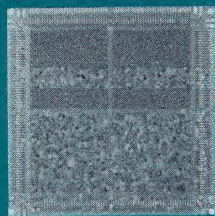
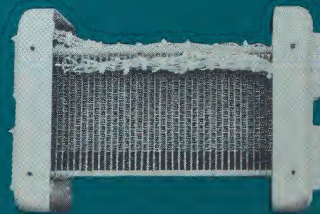
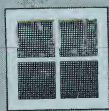


AMPEX

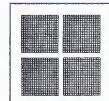


**CORE
MEMORY
COMPONENTS**





AMPEX AZTEC ARRAYS AND STACKS

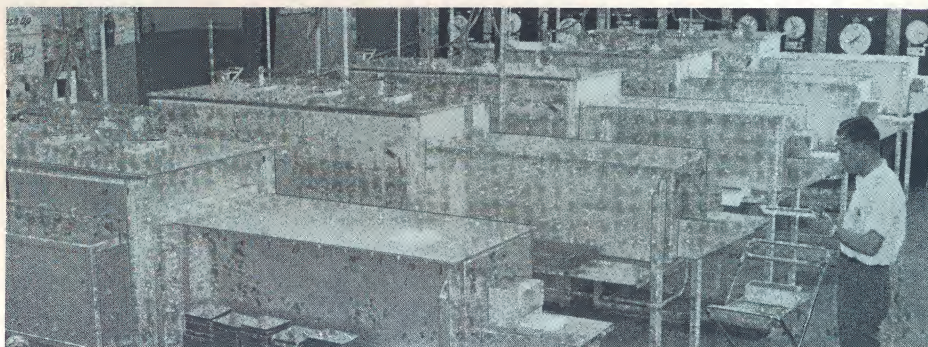


AMPEX CORE MEMORY COMPONENTS

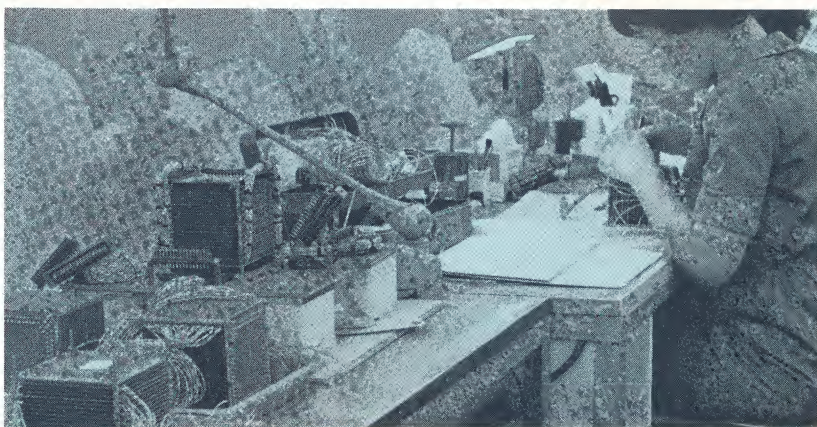
Ampex is the oldest, largest and most experienced independent supplier of core memory components in the United States — with over TWO BILLION wired bits delivered. At Ampex Computer Products, a highly active research program is conducted to continuously advance core memory technology. This program has produced such improved components as wide temperature range cores and the versatile Inca and Aztec stacks.

The overall impact of Ampex improvements in core memory technology has resulted in **smaller**, **faster**, more **reliable** and more **economical** core memories and components — components that have earned the confidence of industry as a whole. Ampex can supply ferrites or wired and tested memories for nearly any application. These components are described in the condensed specifications for arrays, stacks and cores in the loose-leaf sections of this folder.

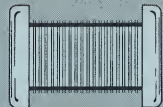
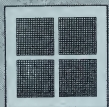
FIRING CORES—Pressed ferrite cores are fired under carefully measured, charted and controlled conditions. Advanced Ampex firing techniques “seal in” magnetic characteristics for uniform core performance.



WIRING ARRAYS—Thousands of tiny, tested cores are hand-wired into a variety of matrix configurations. These arrays are then tested and stocked for “instant assembly” into the stack you specify.



ASSEMBLING STACKS—Arrays are assembled, interconnected and hand-soldered into finished core memory stacks with appropriate terminations. Before shipment, each stack is meticulously tested to insure that it meets maximum performance for all specifications.



AMPEX AZTEC ARRAYS AND STACKS

AZTEC ARRAYS

Standard Aztec arrays offer a number of superior mechanical and electrical features. ALL Aztec arrays incorporate unique printed circuit solder pads which have particularly large solder-joint contact areas. These Aztec terminations, plus heavy pad pretinning, insure permanent and reliable connections within the array — and within the stack when arrays are interconnected to make stacks of any length.

Chemically and thermally stable, insulated magnet wire is used in ALL Aztec matrix wiring. This wire is stripped by chemical means (insuring uniform wire size throughout the matrix) and hand-soldered (to military specifications) on the Aztec solder pads. Matrices are wired in separate layers with the sense winding separated from the inhibit winding by two drive lines; this results in noise-free, uniform and extra stable performance of the array. Short winding length in Aztec array

design, combined with large-gauge wire, gives Aztec arrays extremely low line impedance.

Aztec **solid-frame arrays** offer some **exceptional** features. These frames are coated with a thin film of silicone rubber to protect the ferrites. Cores rest on this rubber coating which allows the **matrix wires to act as current conductors only, not mechanical supports for the cores**. Since matrix wires pass freely through the cores, and do not exert any mechanical strain on the cores, solid-frame arrays do not exhibit magnetostrictive effects.

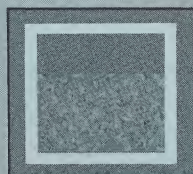
Aztec arrays wired with 22 and 30-mil cores are available in two sizes: "A" (standard size) and "B" (double size). 50-mil cores are available in "A" size only. Below is a table of dimensions for "A" and "B" arrays — and illustrations of Ampex standard matrix configurations.

AZTEC ARRAY DIMENSIONS

ARRAY	SIZE (Inches)	THICKNESS (Inches)	MOUNTING HOLE CENTERS (Inches)	ROD SIZE
22A	2.43 x 2.43	.031	2.250 square	#4
22B	3.88 x 3.88	.031	3.650 square	#4
30A	3.25 x 3.25	.031	3.000 square	#4
30B	5.12 x 5.12	.062	4.875 square	#4
50A	4.35 x 4.35	.031	4.050 square	#4

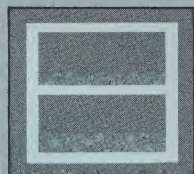
AZTEC ARRAY CONFIGURATIONS

AZTEC A ARRAY

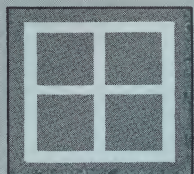


Single Sided
Double Sided

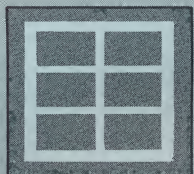
64 x 64 x 1
64 x 64 x 2



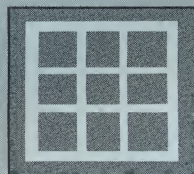
32 x 64 x 2
32 x 64 x 4



32 x 32 x 4

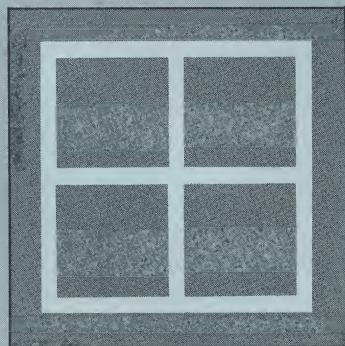


16 x 32 x 6



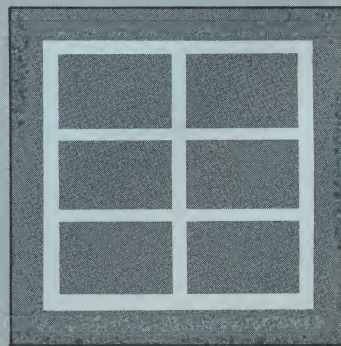
16 x 16 x 9

AZTEC B ARRAY



64 x 64 x 4

(For use in 4096, 8192
or 16,384 word memories)



32 x 64 x 6

AZTEC STACKS

Ampex stacks made from Aztec arrays are unique in design and performance. They offer memory systems designers a wide choice of stack parameters, while still utilizing the price and delivery advantage of standard arrays. The MODULAR approach used in Aztec stacks permits a large number of configurations and operating conditions to be specified — using any 50, 30 or 22-mil core offered by Ampex. The loose-leaf core specifications in this folder contain tables of PERFORMANCE IN AZTEC STACKS, as a handy guide to the operating parameters of specific core types in stacks of various capacities and word lengths.

MODULAR — Standard array frames allow a variety of memory configurations at the lowest price and fastest delivery.

COMPACT — Superior mechanical design permits maximum component density . . . minimum stack size.

HAND-SOLDERED — All arrays in Aztec stacks are interconnected by reliable, military-type hand soldering.

AIR-VENTED — Natural convection cooling is provided in Aztec stacks because of the wide spacing between arrays.

TESTED — Each Aztec stack is FULLY TESTED and GUARANTEED by Ampex for the conditions specified.

AZTEC STACKS / MECHANICAL SPECIFICATIONS

WIRING — Windings are magnet wire with heavy insulation. Leadoff wires on sense and inhibit windings are twisted pairs.

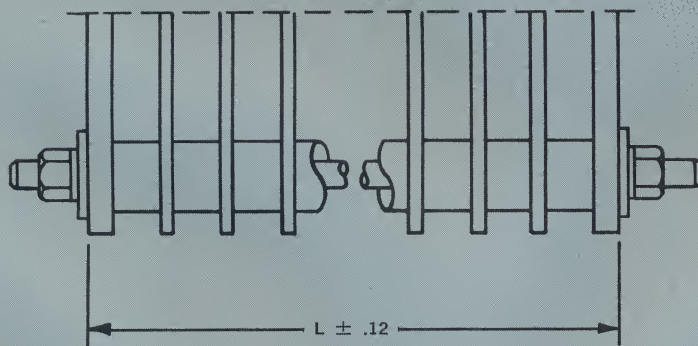
HARDWARE — Arrays are stacked using #4 rod and epoxy spacers; all hardware is military-type.

TERMINATIONS — Terminal boards are furnished as an extra frame at each end of the stack.

TYPES OF TERMINATION AVAILABLE

1. Terminal board with identified leadoff wires two feet long, 26 gauge P.V.C.
2. Terminal board without leadoff wires.
3. Stack with Winchester SRE50 (50 pin) connectors mounted on additional connector panel; mating plugs supplied with each unit.

AZTEC STACKS / LENGTH FORMULA



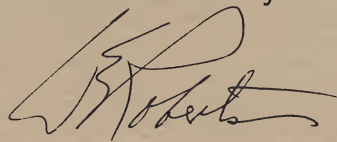
AZTEC 50	$L = (N \times .153) + .24" (\pm \frac{1}{8}")$
AZTEC 30A	$L = (N \times .184) + .27" (\pm \frac{1}{8}")$
AZTEC 30B	$L = (N \times .213) + .27" (\pm \frac{1}{8}")$
AZTEC 22A or B	$L = (N \times .153) + .24" (\pm \frac{1}{8}")$
N = Number of frames (arrays) in the stack.	

AZTEC STACK TESTING

All Aztec stacks undergo severe tests which involve mechanical and electrical conditions necessary to uncover all known failure mechanisms. All arrays and stacks are subjected to static electrical tests involving resistance test of windings and voltage breakdown between lines. Mechanical tests include vibration with acceleration of 4 g's and temperature cycling to 95°C. Final dynamic testing of arrays and stacks seals in uniformity of performance and provides assurance of quality in each individual stack.

AMPEX

THANK YOU for your recent inquiry. We are enclosing the literature that you have requested. For further information, please contact the AMPEX office nearest you.

A handwritten signature in black ink, appearing to read "B. Roberts", is positioned in the bottom right corner of the page.

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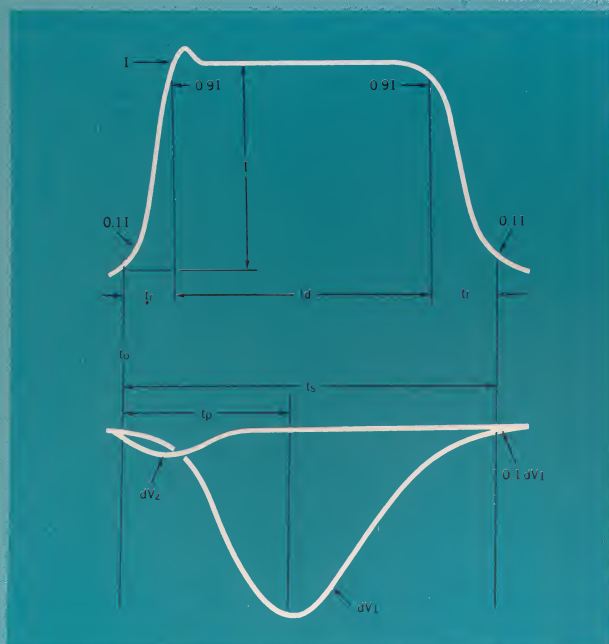
AMPEX CORES

DEFINITIONS OF TERMS AND CHARACTERISTICS FOR CORES, STACKS AND ARRAYS

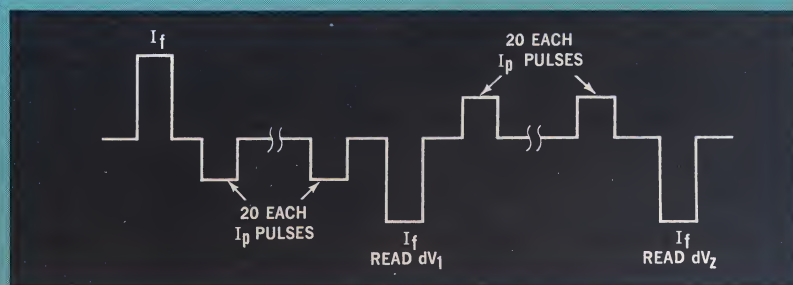
- I_f = The magnitude of the full drive current for coincident current storage elements.
 I_p = The magnitude of the partial drive current for coincident current storage elements.
 I_r = The magnitude of the read current for linear select storage elements.
 I_w = The magnitude of the partial write current in the word drive line for linear select storage elements.
 t_r = Pulse rise time defined as the time between the 10% and the 90% levels of the leading edge of a current pulse.
 t_f = Pulse fall time defined as the time between the 90% and the 10% levels of the trailing edge of a current pulse.
 t_d = Pulse duration defined as the time between the 90% level points of a current pulse.
 t_p = Peaking time defined as the time between the 10% level of the leading edge of the read current pulse, and the peak value of the output signal from the core.
 t_s = Switching time defined as the time between the 10% level of the leading edge of the read pulse and the 10% level of the trailing edge of the output signal.
 dV_1 = Disturbed "ONE" response voltage defined as the peak value of the response voltage obtained by a full read pulse which has been preceded by a full write pulse, followed by a specified number of partial read current pulses.
 dV_z = Disturbed "ZERO" response voltage defined as the peak value of the response voltage obtained by a full read pulse which has been preceded by a full read pulse followed by a specified number of partial write pulses.
OD = Outside Diameter (of core)
ID = Inside Diameter (of core)
HT = Core Height
DCB = Double Checker Board, Worst Case Test Pattern

PARAMETERS COMMON TO FERRITE CORES

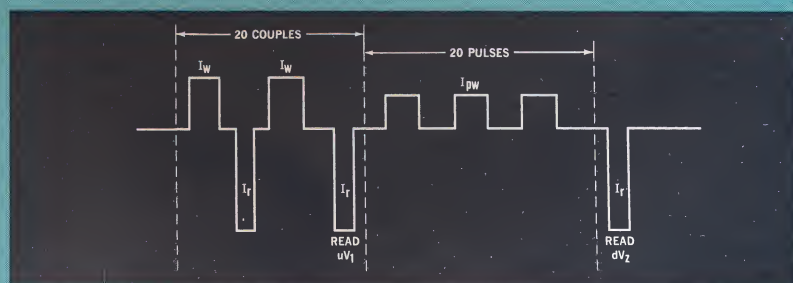
TYPICAL CURRENT AND OUTPUT PULSES FOR COINCIDENT CURRENT CORES



COINCIDENT CURRENT TEST PULSE PROGRAM



LINEAR SELECT TEST PULSE PROGRAM





AMPEX CORES

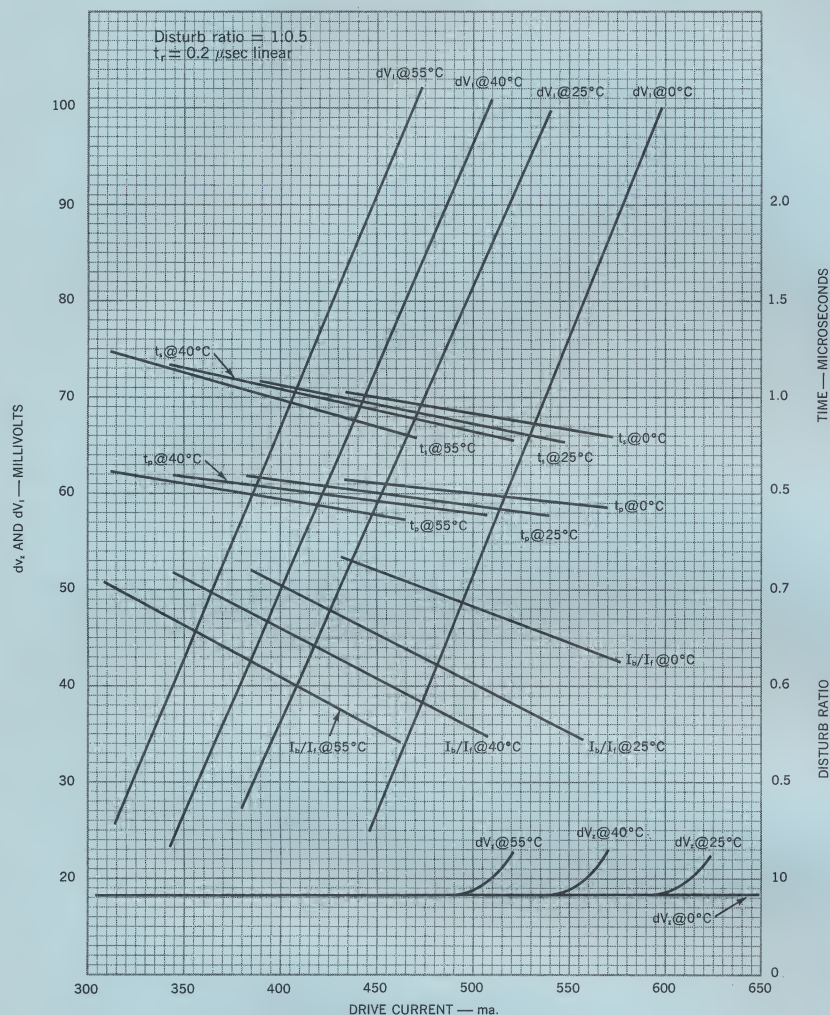
QUICK REFERENCE INDEX

COINCIDENT CURRENT CORES

CORE TYPE	SIZE OD/ID/Ht (mils)	TYPICAL OPERATING CONDITIONS			TYPICAL OUTPUT SIGNAL			
		I_t/I_p (ma turns)	t_r (μ sec)	t_d (μ sec)	dV_l (mv)	dV_z (mv)	t_p (μ sec)	t_s (μ sec)
STANDARD TEMPERATURE RANGE								
501-10	50/30/15	500/250	0.20	1.50	81	8.0	0.43	0.85
504-10	50/30/15	385/193	0.20	2.00	53	9.0	0.60	1.30
506-15	50/29/15	350/175	0.50	3.00	57	5.5	0.86	1.50
303-03	30/20/6.8	720/360	0.10	0.80	44	4.5	0.20	0.36
303-05	30/20/7.5	500/250	0.20	0.80	42	3.0	0.31	0.47
WIDE TEMPERATURE RANGE								
304-06	30/20/7.5	720/360	0.10	0.80	50	5.0	0.24	0.44
304-07	30/20/7.5	650/325	0.10	0.80	71	6.0	0.21	0.38
204-06	22/13.5/5.5	800/400	0.05	0.30	59	6.0	0.117	0.233

LINEAR SELECT CORES

CORE TYPE	SIZE OD/ID/Ht (mils)	TYPICAL OPERATING CONDITIONS			TYPICAL OUTPUT SIGNAL			
		I _r /I _w /I _{pw} (in ma)	t _r (μsec)	t _d (μsec)	dV _l (mv)	dV _z (mv)	t _p (μsec)	t _s (μsec)
STANDARD TEMPERATURE RANGE								
501-03	50/30/15	550/300/140	0.10	0.20	110–140	27	0.145	0.25
302-02	30/20/6.5	390/202/125	0.10	0.12	50–62	8	0.115	0.22
WIDE TEMPERATURE RANGE								
304-10	30/18/10	700/600/265	0.10	3.00	120–140	9	0.22	0.45
201-02	22/13.5/5.5	840/655/345	0.03	0.10	65	20	0.04	0.08

AMPEX
**CORE TYPE
501-10**
**STANDARD TEMPERATURE RANGE
COINCIDENT CURRENT CORE**
TYPICAL CHARACTERISTICS FOR 501-10 CORES

DIMENSIONS

O.D.050"
I.D.030"
Thickness015"

**TYPICAL OPERATING
CONDITIONS AT 25°C**

Full Drive Pulse (I_f) 500 ma
Partial Drive Pulse (I_p) 250 ma
Pulse Width (t_d) 1.5 μsec
Pulse Risettime (t_r) 0.2 μsec
Pulse Falltime (t_f) 0.2 μsec

TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1) 81 mv
Amplitude ZERO (dV_z) 8.0 mv
Peaking Time (t_p) 0.43 μsec
Switching Time (t_s) 0.85 μsec

TYPE 501-10 CORES / PERFORMANCE IN AZTEC STACKS

				PATTERN		All "1"		All "0"		Worst Case D.C.B.			
						I_x, I_y		I_{inh}		I_x, I_y		I_{inh}	
						Nom.	-5%	Nom.	+5%	Nom.	-5%	Nom.	+5%
WORDS				OUTPUT									
No.	X	Y	Bits/Array	dV_1 Min.	dV_1 Max.	dV_z Min.	dV_z Max.	dV_1 Min.	dV_1 Max.	dV_z Min.	dV_z Max.	dV_1 Min.	dV_1 Max.
256	16	16	9	68	58	5	5	72	5	62	5	72	5
512	16	32	6	68	58	5	5	72	5	62	5	72	5
1024	32	32	4	68	58	5	5	72	6	62	6	72	6
2048	32	64	2	68	58	5	5	72	7	62	7	72	7
2048	32	64	4	68	58	5	5	72	7	62	7	72	7
2048	32	64	6	—	—	—	—	—	—	—	—	—	—
4096	64	64	1	68	58	5	5	72	8	62	8	72	8
4096	64	64	2	68	58	5	5	72	8	62	8	72	8

TEST CONDITIONS:

$I_x, I_y = 250 \text{ ma}$
 $t_d = 2.0 \mu\text{sec}$
 $I_{inh} = 225 \text{ ma}$
 $t_d = 2.5 \mu\text{sec}$
 $t_r = t_f = 0.2 \mu\text{sec}$

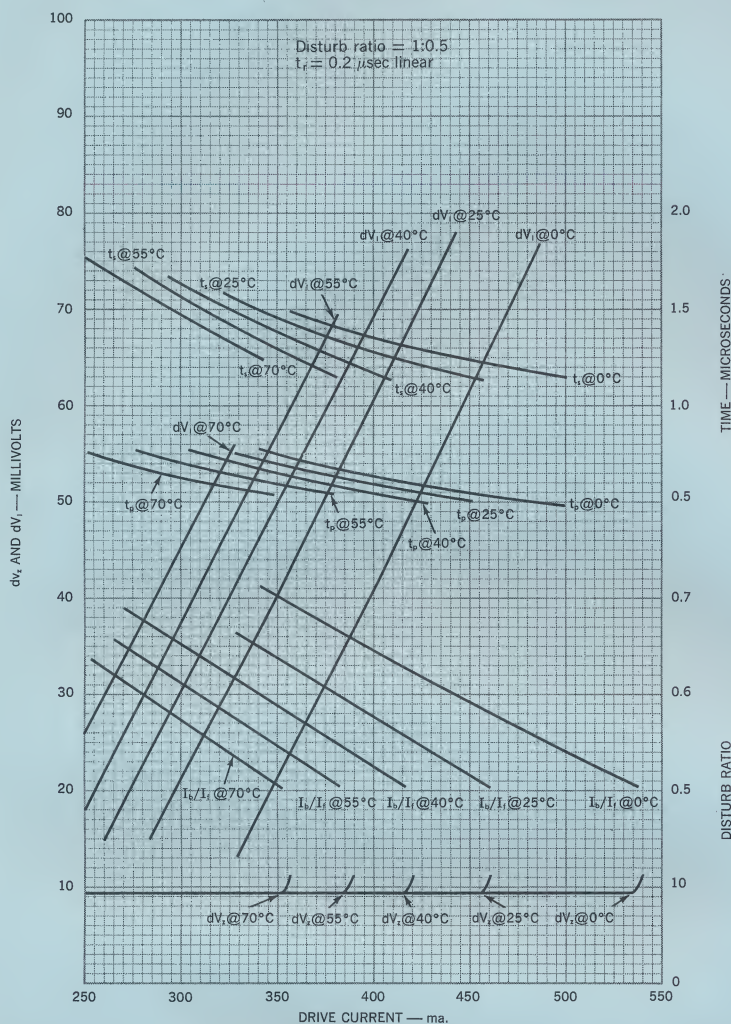
SIGNAL TIMING:

$t_p = 0.48 \pm .05 \mu\text{sec}$
 $t_s = 1.0 \mu\text{sec}$ max.

SENSE TERMINATION:

200 ohm

TEMPERATURE: 25°C

AMPEX
**CORE TYPE
504-10**
**STANDARD TEMPERATURE RANGE
COINCIDENT CURRENT CORE**
TYPICAL CHARACTERISTICS FOR 504-10 CORES

DIMENSIONS

O.D.050"

I.D.030"

Thickness015"

**TYPICAL OPERATING
CONDITIONS AT 25°C**

Full Drive Pulse (I_f) 385 ma

Partial Drive Pulse (I_p) 192.5 ma

Pulse Width (t_d) 2.0 μsec

Pulse Risetime (t_r) 0.2 μsec

Pulse Faltime (t_f) 0.2 $\mu\text{sec min.}$
TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1) 53 mv

Amplitude ZERO (dV_2) 9.0 mv

Peaking Time (t_p) 0.60 μsec

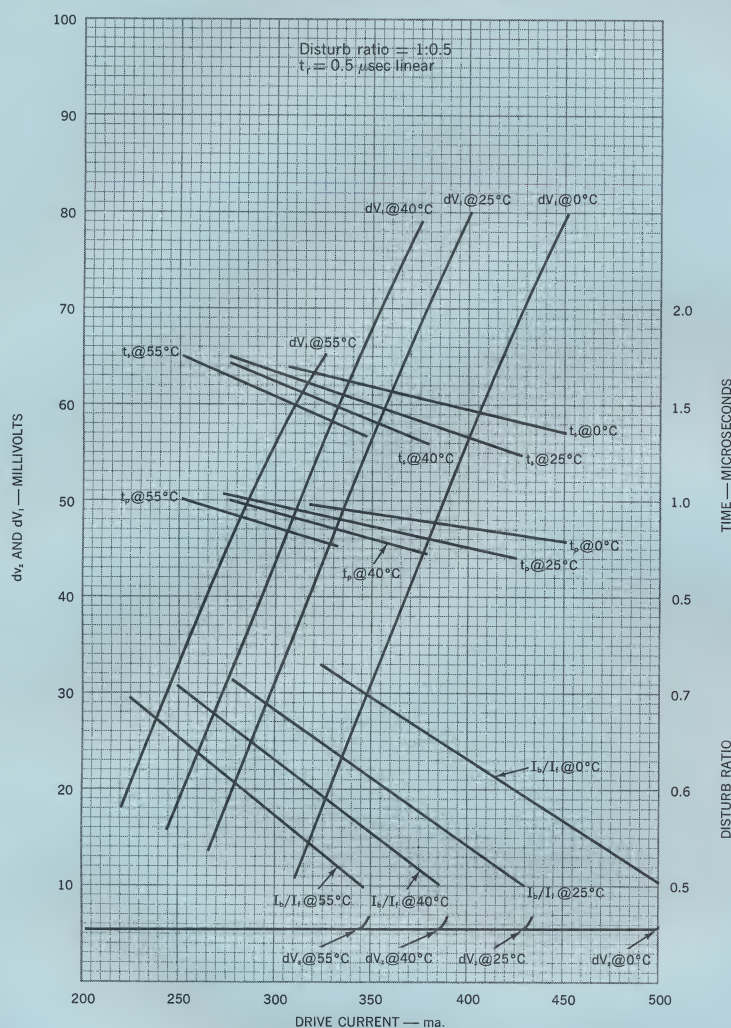
Switching Time (t_s) 1.30 μsec
TYPE 504-10 CORES / PERFORMANCE IN AZTEC STACKS

			PATTERN		All "1"		All "0"		Worst Case D.C.B.			
			I_x, I_y		Nom.	-5%	Nom.	-5%	Nom.		-5%	
			I_{inh}		—	—	Nom.	+5%	Nom.		+5%	
WORDS			OUTPUT		dV_1	dV_1	dV_2	dV_2	dV_1	dV_2	dV_1	dV_2
No.	X	Y	Bits/Array		Min.	Min.	Max.	Max.	Min.	Max.	Min.	Max.
256	16	16	9		45	38	4	4	45	5	38	5
512	16	32	6		45	38	4	4	46	5	39	5
1024	32	32	4		45	38	4	4	47	5	40	5
2048	32	64	2		45	38	4	4	47	6	40	6
2048	32	64	4		45	38	4	4	47	6	40	6
2048	32	64	6		—	—	—	—	—	—	—	—
4096	64	64	1		45	38	4	4	47	6	40	6
4096	64	64	2		45	38	4	4	47	6	40	6

TEST CONDITIONS:
 $I_x, I_y = 192.5 \text{ ma}$
 $t_d = 2.0 \mu\text{sec}$
 $I_{inh} = 173 \text{ ma}$
 $t_d = 2.5 \mu\text{sec}$
 $t_r = t_f = 0.2 \mu\text{sec}$
SIGNAL TIMING:
 $t_p = 0.6 \pm .06 \mu\text{sec}$
 $t_s = 1.44 \mu\text{sec max.}$
SENSE TERMINATION:

200 ohm

TEMPERATURE: 25° C

AMPEX
**CORE TYPE
506-15**
**STANDARD TEMPERATURE RANGE
COINCIDENT CURRENT CORE**
TYPICAL CHARACTERISTICS FOR 506-15 CORES

DIMENSIONS

O.D.050"

I.D.029"

Thickness015"

**TYPICAL OPERATING
CONDITIONS AT 25°C**

Full Drive Pulse (I_r).....350 ma

Partial Drive Pulse (I_p).....175 ma

Pulse Width (t_d).....3.0 μsec

Pulse Risetime (t_r).....0.5 $\mu\text{sec linear}$

Pulse Falltime (t_f).....0.5 μsec
TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1).....57 mv

Amplitude ZERO (dV_z).....5.5 mv

Peaking Time (t_p).....0.86 μsec

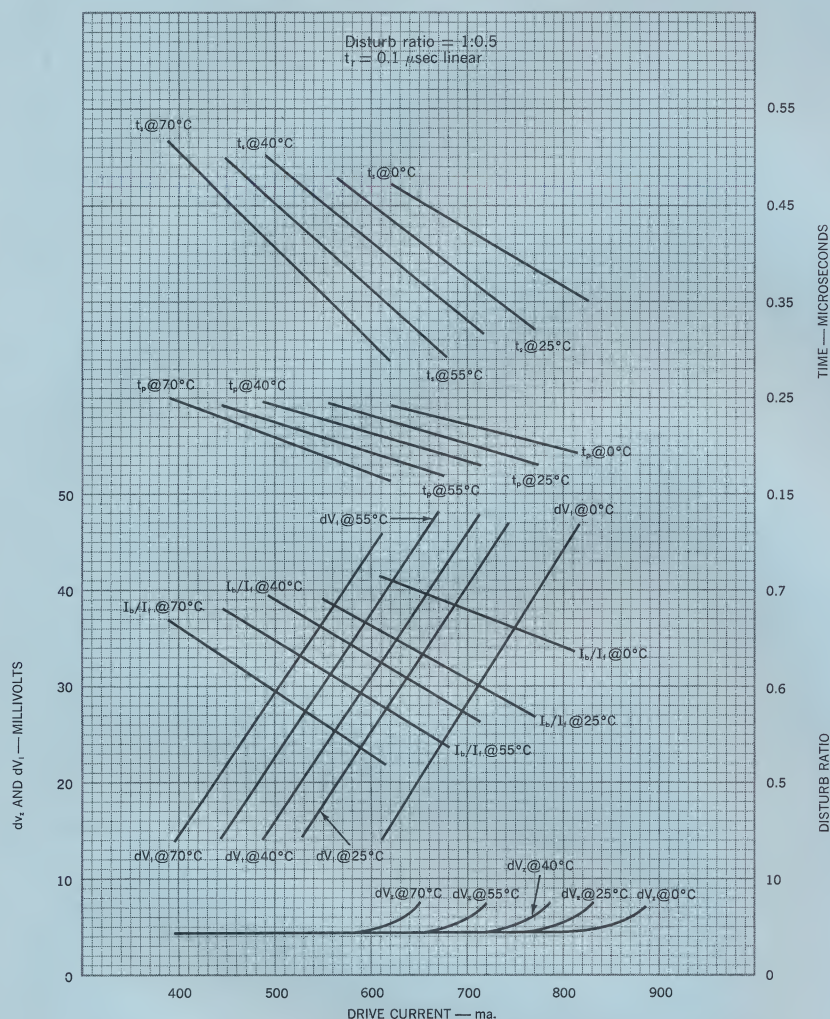
Switching Time (t_s).....1.50 μsec
TYPE 506-15 CORES / PERFORMANCE IN AZTEC STACKS

				All "1"		All "0"		Worst Case D.C.B.			
				I_x, I_y	Nom. -5%	Nom. -5%	Nom. -5%	Nom.		-5%	
				I_{inh}	—	—	Nom. +5%	Nom.		+5%	
WORDS				OUTPUT							
No.	X	Y	Bits/Array	dV_1 Min.	dV_1 Min.	dV_z Max.	dV_z Max.	dV_1 Min.	dV_z Max.	dV_1 Min.	dV_z Max.
256	16	16	9	48	40	5	5	50	5	42	5
512	16	32	6	48	40	5	5	52	5	44	5
1024	32	32	4	48	40	5	5	54	6	46	6
2048	32	64	2	48	40	5	5	54	8	46	8
2048	32	64	4	48	40	5	5	54	8	46	8
2048	32	64	6	—	—	—	—	—	—	—	—
4096	64	64	1	48	40	5	5	54	10	46	10
4096	64	64	2	48	40	5	5	54	10	46	10

TEST CONDITIONS:
 $I_x, I_y = 175 \text{ ma}$
 $t_d = 3.0 \mu\text{sec}$
 $I_{inh} = 158 \text{ ma}$
 $t_d = 3.5 \mu\text{sec}$
 $t_r = t_f = 0.5 \mu\text{sec}$
SIGNAL TIMING:
 $t_p = 0.85 \pm .08 \mu\text{sec}$
 $t_s = 1.6 \mu\text{sec}$
SENSE TERMINATION:

200 ohm

TEMPERATURE: 25° C

AMPEX**CORE TYPE
303-03****STANDARD TEMPERATURE RANGE
COINCIDENT CURRENT CORE****TYPICAL CHARACTERISTICS FOR 303-03 CORES****DIMENSIONS**

O.D.030"

I.D.020"

Thickness0068"

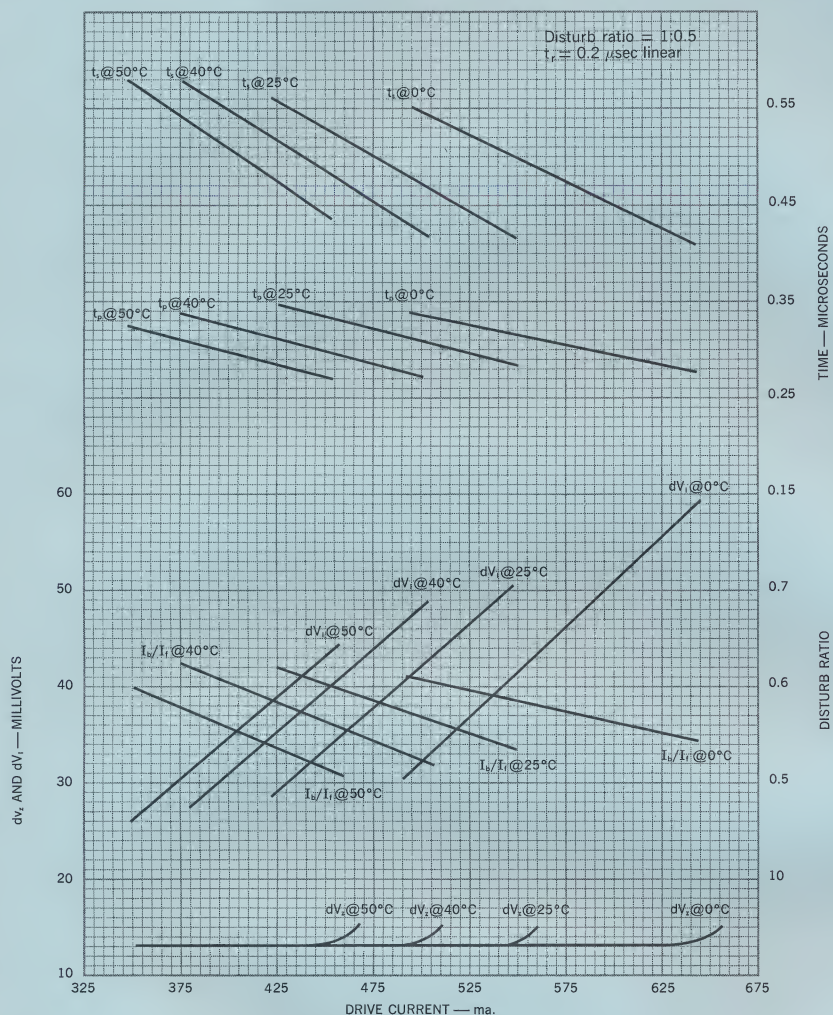
**TYPICAL OPERATING
CONDITIONS AT 25°C**Full Drive Pulse (I_r) 720 maPartial Drive Pulse (I_p) 360 maPulse Width (t_d) 0.8 μsec Pulse Risetime (t_r) 0.1 μsec Pulse Faltime (t_f) 0.1 μsec **TYPICAL OUTPUT SIGNALS**Amplitude ONE (dV_1) 44 mvAmplitude ZERO (dV_z) 4.5 mvPeaking Time (t_p) 0.20 μsec Switching Time (t_s) 0.36 μsec **TYPE 303-03 CORES / PERFORMANCE IN AZTEC STACKS**

			PATTERN	All "1"		All "0"		Worst Case D.C.B.			
			I _x , I _y	Nom.	—5%	Nom.	—5%	Nom.		—5%	
			I _{inh}	—	—	Nom.	+5%	Nom.		+5%	
WORDS			OUTPUT	dV _I Min.	dV _I Min.	dV _z Max.	dV _z Max.	dV _I Min.	dV _z Max.	dV _I Min.	dV _z Max.
No.	X	Y	Bits/Array								
256	16	16	9	36	32	4	4	36	4	32	4
512	16	32	6	36	32	4	4	36	4	32	4
1024	32	32	4	36	32	4	4	37	4	33	4
2048	32	64	2	36	32	4	4	38	4	34	4
2048	32	64	4	36	32	4	4	38	4	34	4
2048	32	64	6	36	32	4	4	38	4	34	4
4096	64	64	1	36	32	4	4	39	5	35	5
4096	64	64	2	36	32	4	4	39	5	35	5
4096	64	64	4	36	32	4	4	39	5	35	5

TEST CONDITIONS: $I_x, I_y = 360 \text{ ma}$ $t_d = 0.8 \mu\text{sec}$ $I_{inh} = 324 \text{ ma}$ $t_d = 1.0 \mu\text{sec}$ $t_r = t_f = 0.2 \mu\text{sec}$ **SIGNAL TIMING:** $t_p = 0.31 \pm .03 \mu\text{sec}$ $t_s = 0.48 \mu\text{sec}$ **SENSE TERMINATION:**

300 ohm

TEMPERATURE: 25° C

AMPEX**CORE TYPE
303-05****STANDARD TEMPERATURE RANGE
COINCIDENT CURRENT CORE****TYPICAL CHARACTERISTICS FOR 303-05 CORES****DIMENSIONS**

O.D.030"

I.D.020"

Thickness0075"

**TYPICAL OPERATING
CONDITIONS AT 25°C**

Full Drive Pulse (I_f) 500 ma

Partial Drive Pulse (I_p) 250 ma

Pulse Width (t_d) 0.8 μsec

Pulse Risettime (t_r) 0.2 $\mu\text{sec linear}$

Pulse Faltime (t_f) 0.2 μsec

TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1) 42 mv

Amplitude ZERO (dV_z) 3.0 mv

Peaking Time (t_p) 0.31 μsec

Switching Time (t_s) 0.47 μsec

TYPE 303-05 CORES / PERFORMANCE IN AZTEC STACKS

				PATTERN		All "1"		All "0"		Worst Case D.C.B.			
				I_x, I_y		Nom. -5%		Nom. -5%		Nom.		-5%	
				I_{inh}		—		Nom. +5%		Nom.		+5%	
WORDS				OUTPUT		dV_1		dV_z		dV_1		dV_z	
No.	X	Y	Bits/Array	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
256	16	16	9	36	32	4	4	37	4	33	4		
512	16	32	6	36	32	4	4	37	4	33	4		
1024	32	32	4	36	32	4	4	37	6	33	6		
2048	32	64	2	36	32	4	4	38	8	34	8		
2048	32	64	4	36	32	4	4	38	8	34	8		
2048	32	64	6	36	32	4	4	38	8	34	8		
4096	64	64	1	36	32	4	4	39	10	35	10		
4096	64	64	2	36	32	4	4	39	10	35	10		
4096	64	64	4	36	32	4	4	39	10	35	10		

TEST CONDITIONS:

$I_x, I_y = 250 \text{ ma}$

$t_d = 0.8 \mu\text{sec}$

$I_{inh} = 225 \text{ ma}$

$t_d = 1.0 \mu\text{sec}$

$t_r = t_f = 0.2 \mu\text{sec}$

SIGNAL TIMING:

$t_p = 0.34 \pm .03 \mu\text{sec}$

$t_s = 0.5 \mu\text{sec max.}$

SENSE TERMINATION:

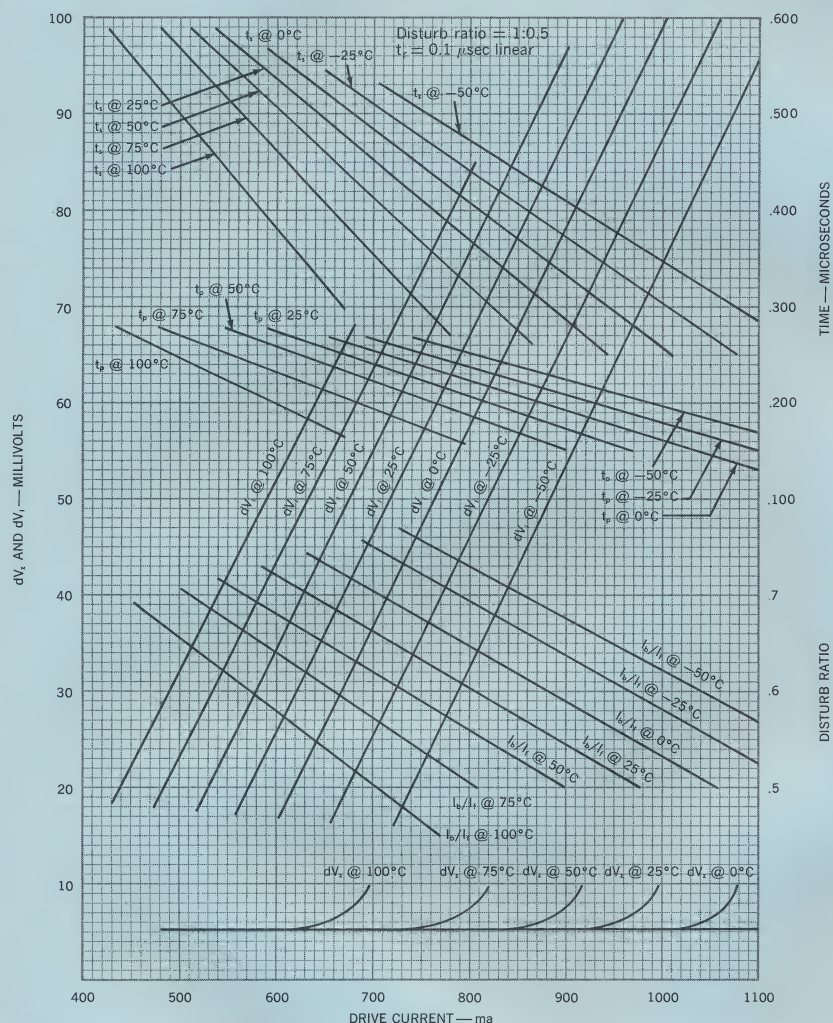
300 ohm

TEMPERATURE: 25° C

CORE TYPE
304-06

**WIDE TEMPERATURE RANGE
COINCIDENT CURRENT CORE**

TYPICAL CHARACTERISTICS FOR 304-06 CORES



DIMENSIONS

O.D. _____ .030"

I.D. _____ .020"

Thickness0075"

TYPICAL OPERATING CONDITIONS AT 25°C

(May be operated without current compensation from 0°C to 75°C.)

Full Drive Pulse (I_f) 720 maPartial Drive Pulse (I_p) 360 maPulse Width (t_d) $0.8 \mu\text{sec}$ Pulse Risettime (t_r) 0.1 μ sec linearPulse Faltime (t_f) 0.1 μ sec

TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_i) 41 to 67 mv

Amplitude ZERO (dV_z) 5.0 mv

Peaking Time (t_p) 0.18 to 0.25 μsec

Switching Time (t_s) 0.33 to 0.47 μsec

TYPE 304-06 CORES / PERFORMANCE IN AZTEC STACKS

			PATTERN	All "1"		All "0"		Worst Case D.C.B.			
			I_x, I_y	Nom.	−5%	Nom.	−5%	Nom.		−5%	
			I_{inh}	—	—	Nom.	+5%	Nom.		+5%	
WORDS			OUTPUT	dV_I	dV_I	dV_z	dV_z	dV_I	dV_z	dV_I	dV_z
No.	X	Y	Bits/Array	Min.	Min.	Max.	Max.	Min.	Max.	Min.	Max.
256	16	16	9	40	35	4	4	40	4	35	4
512	16	32	6	40	35	4	4	40	4	35	4
1024	32	32	4	40	35	4	4	41	4	36	4
2048	32	64	2	40	35	4	4	41	4	36	4
2048	32	64	4	40	35	4	4	41	4	36	4
2048	32	64	6	40	35	4	4	41	4	36	4
4096	64	64	1	40	35	4	4	42	5	37	5
4096	64	64	2	40	35	4	4	42	5	37	5
4096	64	64	4	40	35	4	4	42	5	37	5

TEST CONDITIONS:

$$I_x, I_y = 360 \text{ ma}$$
$$t_d = 0.8 \mu\text{sec}$$
 $t_{inh} = 324 \text{ ma}$
$$t_d = 1.0 \mu\text{sec}$$
$$t_r = t_f = 0.2 \mu\text{sec}$$

SIGNAL TIMING:

$$t_p = 0.34 \pm .03 \mu\text{sec}$$
$$t_s = 0.55 \mu\text{sec}$$

SENSE TERMINATION:

300 ohm

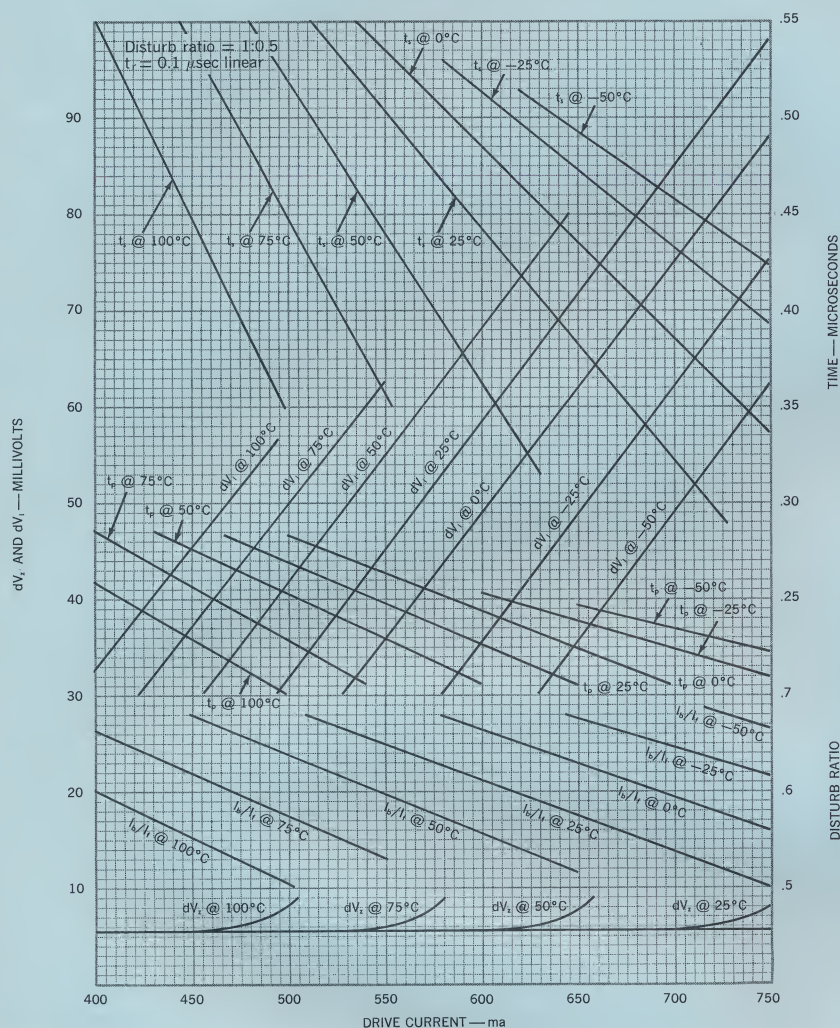
TEMPERATURE: 25° C

AMPEX

CORE TYPE 304-07

WIDE TEMPERATURE RANGE COINCIDENT CURRENT CORE

TYPICAL CHARACTERISTICS FOR 304-07 CORES



DIMENSIONS

O.D.030"
I.D.020"
Thickness0075"

TYPICAL OPERATING CONDITIONS AT 25°C

(May be operated without current compensation from 0°C to 75°C.)

Full Drive Pulse (I_f) 540 ma
Partial Drive Pulse (I_p) 270 ma
Pulse Width (t_d) 0.8 μsec
Pulse Risetime (t_r) 0.1 μsec linear
Pulse Falltime (t_f) 0.1 μsec

TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1) 33 to 60 mv
Amplitude ZERO (dV_2) 5.5 mv
Peaking Time (t_p)205 to .278 μsec
Switching Time (t_s)375 to .545 μsec

TYPE 304-07 CORES / PERFORMANCE IN AZTEC STACKS

			PATTERN	All "1"		All "0"		Worst Case D.C.B.			
			I _x , I _y	Nom.	−5%	Nom.	−5%	Nom.		−5%	
			I _{inh}	—	—	Nom.	+5%	Nom.		+5%	
WORDS			OUTPUT	dV _I Min.	dV _I Min.	dV _z Max.	dV _z Max.	dV _I Min.	dV _z Max.	dV _I Min.	dV _z Max.
No.	X	Y	Bits/Array								
256	16	16	9	46	40	4	4	46	4	40	4
512	16	32	6	46	40	4	4	46	4	40	4
1024	32	32	4	46	40	4	4	47	4	41	4
2048	32	64	2	46	40	4	4	48	4	42	4
2048	32	64	4	46	40	4	4	48	4	42	4
2048	32	64	6	46	40	4	4	48	4	42	4
4096	64	64	1	46	40	4	4	49	5	43	5
4096	64	64	2	46	40	4	4	49	5	43	5
4096	64	64	4	46	40	4	4	49	5	43	5

TEST CONDITIONS:

I_x, I_y = 305 ma
 t_d = 0.8 μsec
 I_{inh} = 275 ma
 t_d = 1.0 μsec
 $t_r = t_f = 0.2$ μsec

SIGNAL TIMING:

$t_p = 0.33 \pm .03$ μsec
 $t_s = 0.55$ μsec max.

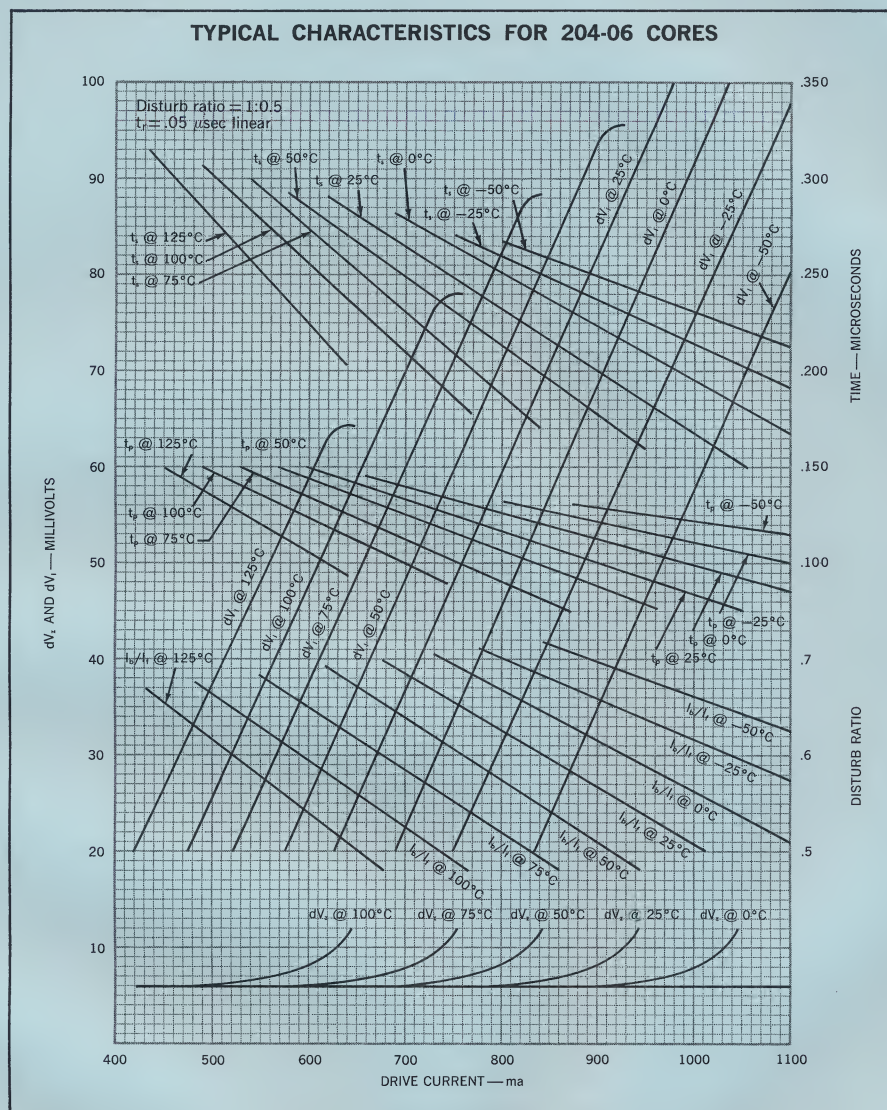
SENSE TERMINATION:

300 ohm

TEMPERATURE: 25° C

AMPEX**CORE TYPE
204-06****WIDE TEMPERATURE RANGE
COINCIDENT CURRENT CORE**

NOTE: MATRICES AND STACKS WIRED WITH THESE CORES OFFER COINCIDENT CURRENT OPERATION AT SPEEDS IN THE REGION OF 1 MICROSECOND. THEY MAY BE OPERATED WITHOUT CURRENT COMPENSATION FROM 0° TO 75°C.

**DIMENSIONS**

O.D.022"
I.D.0135"
Thickness0055"

**TYPICAL OPERATING
CONDITIONS AT 25°C**

Full Drive Pulse (I_r) 800 ma
Partial Drive Pulse (I_p) 400 ma
Pulse Width (t_d)30 μsec
Pulse Risetime (t_r)05 μsec
Pulse Falltime (t_f)05 μsec

TYPICAL OUTPUT SIGNALS

Amplitude ONE (dV_1) 59 mv
Amplitude ZERO (dV_z) 6 mv
Peaking Time (t_p)107 μsec
Switching Time (t_s)233 μsec

INFORMATION ON THE PERFORMANCE OF TYPE 204-06 CORES IN STACKS IS AVAILABLE ON REQUEST.

AMPEX
CORE TYPE
501-03
302-02
STANDARD TEMPERATURE RANGE
LINEAR SELECT CORES

TYPE 501-03

DIMENSIONS

O.D.050"

I.D.030"

Thickness015"

TYPICAL OUTPUT SIGNALS

Amplitude ONE (μV_1) 110 to 140 mv

Amplitude ZERO (dV_z) 27 mv

Peaking Time (t_p) 0.145 μ sec

Switching Time (t_s) 0.25 μ sec

TYPICAL OPERATING CONDITIONS AT 25°C

DRIVE PULSE	READ (I_r)	WRITE (I_w)	PARTIAL WRITE (I_{pw})
Amplitude (I)	500 ma	300 ma	140 ma
Risetime (t_r)	0.1 μ sec	0.1 μ sec	0.1 μ sec
Falltime (t_f)	0.1 μ sec	0.1 μ sec	0.1 μ sec
Width (t_d)	0.2 μ sec	0.4 μ sec	0.4 μ sec

ADDITIONAL INFORMATION ON THE PERFORMANCE OF THIS CORE IS AVAILABLE ON REQUEST.

TYPE 302-02

DIMENSIONS

O.D.030"

I.D.020"

Thickness0065"

TYPICAL OUTPUT SIGNALS

Amplitude ONE (μV_1) 50 to 62 mv

Amplitude ZERO (dV_z) 8 mv

Peaking Time (t_p)115 μ sec

Switching Time (t_s)22 μ sec

TYPICAL OPERATING CONDITIONS AT 33°C

DRIVE PULSE	READ (I_r)	WRITE (I_w)	PARTIAL WRITE (I_{pw})
Amplitude (I)	390 ma	202 ma	125 ma
Risetime (t_r)	.1 μ sec	.1 μ sec	.1 μ sec
Falltime (t_f)	.1 μ sec	.1 μ sec	.1 μ sec
Width (t_d)	.12 μ sec	.4 μ sec	.4 μ sec

ADDITIONAL INFORMATION ON THE PERFORMANCE OF THIS CORE IS AVAILABLE ON REQUEST.

AMPEXCORE TYPE
304-10
201-02**WIDE TEMPERATURE RANGE
LINEAR SELECT CORES****TYPE 304-10****DIMENSIONS**

O.D.030"

I.D.018"

Thickness010"

TYPICAL OUTPUT SIGNALS

Amplitude ONE (uV_1) 120 to 140 mv

Amplitude ZERO (dV_z) 9 mv

Peaking Time (t_p)22 μ sec

Switching Time (t_s)45 μ sec

WIDE TEMPERATURE CHARACTERISTICS

	AT -55°C	AT +100°C
I_r	700 ma	700 ma
I_w	600 ma	600 ma
I_{pw}	260 ma	220 ma
uV_1	100 mv min.	165 mv max.
dV_z max.	10 mv	10 mv
t_p max.	.25 μ sec	.25 μ sec
t_s max.	.5 μ sec	.5 μ sec

TYPICAL OPERATING CONDITIONS AT 25°C

DRIVE PULSE	READ (I_r)	WRITE (I_w)	PARTIAL WRITE (I_{pw})
Amplitude (I)	700 ma	600 ma	265 ma
Risetime (t_r)	.1 μ sec	.1 μ sec	.1 μ sec
Falltime (t_f)	.1 μ sec	.1 μ sec	.1 μ sec
Width (t_d)	3.0 μ sec	3.0 μ sec	3.0 μ sec

ADDITIONAL INFORMATION ON THE PERFORMANCE OF THIS CORE IS AVAILABLE ON REQUEST.

TYPE 201-02**DIMENSIONS**

O.D.022"

I.D.0135"

Thickness0055"

TYPICAL OUTPUT SIGNALS

Amplitude ONE (uV_1) 65 mv min.

Amplitude ZERO (dV_z) 20 mv max.

Peaking Time (t_p)04 μ sec

Switching Time (t_s)08 μ sec max.

WIDE TEMPERATURE CHARACTERISTICS

	AT 0°C	AT +65°C
I_r	840 ma	840 ma
I_w	705 ma	605 ma
I_{pw}	395 ma	295 ma
uV_1 min.	60 mv	75 mv
dV_z max.	20 mv	20 mv
t_p	.042 μ sec	.038 μ sec
t_s max.	.090 μ sec	.080 μ sec

TYPICAL OPERATING CONDITIONS AT 25°C

DRIVE PULSE	READ (I_r)	WRITE (I_w)	PARTIAL WRITE (I_{pw})
Amplitude (I)	840 ma	655 ma	345 ma
Risetime (t_r)	.03 μ sec	.03 μ sec	.03 μ sec
Falltime (t_f)	.03 μ sec	.03 μ sec	.03 μ sec
Width (t_d)	.10 μ sec	.12 μ sec	.12 μ sec

ADDITIONAL INFORMATION ON THE PERFORMANCE OF THIS CORE IS AVAILABLE ON REQUEST.

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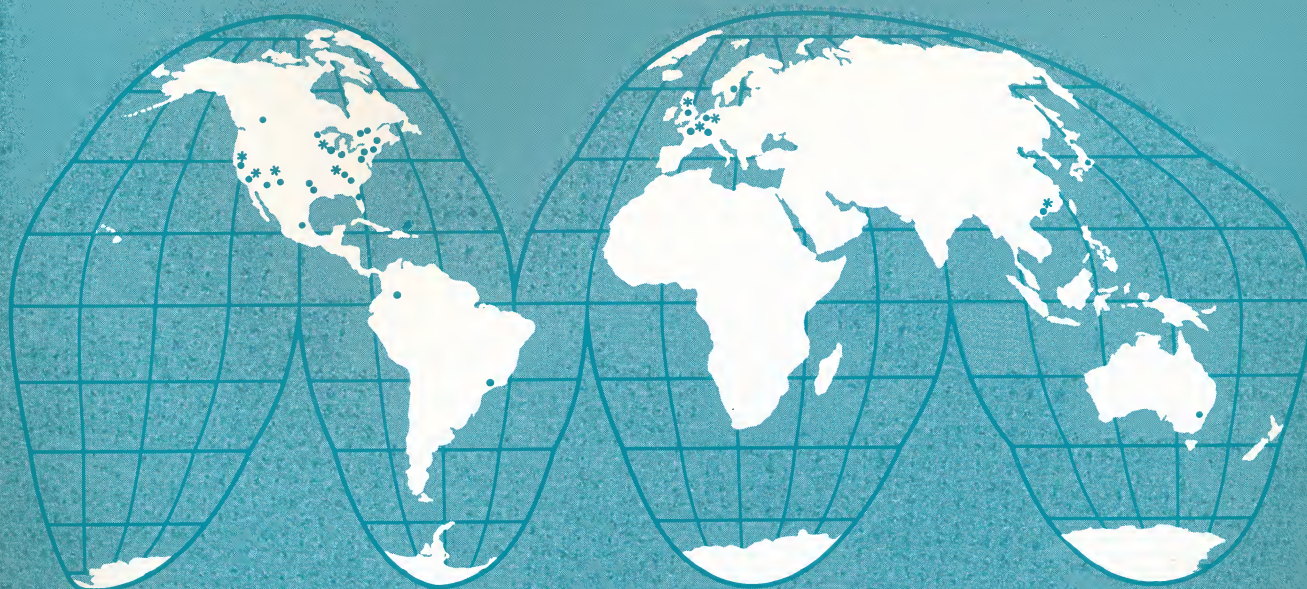
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